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Remarks

Entry of the above-noted amendments, reconsideration of the application, and allowance of all claims pending are respectfully requested. These amendments to the claims constitute a bona fide attempt by applicants to advance prosecution of the application and obtain allowance of certain claims, and are in no way meant to acquiesce to the substance of the rejections. Support for the amendments can be found throughout the specification (e.g., page 5, lines 20-25; page 8, lines 1-18), drawings (e.g., FIGS. 1, 3, 4, 6). Claims 1-9 and 12-18 are pending.

Claim Rejection - 35 U.S.C. §102:

Claims 1, 3-8, 10-13 and 15 are rejected under 35 U.S.C. §102 as being anticipated by Willebrand (U.S. Patent No. 6,239,888). This rejection is respectfully traversed.

It is well-settled that there is no anticipation unless (1) all the same elements are (2) found in exactly the same situation and (3) are united in the same way to (4) perform the identical function. Since the applied reference is missing at least one element of each of applicants' independent claims, applicants respectfully submit that the claimed invention is not anticipated by the applied reference, as further discussed below. For explanatory purposes, applicants discuss herein one or more differences between the applied reference and the claimed invention with reference to one or more parts of the applied reference. This discussion, however, is in no way meant to acquiesce in any characterization that one or more parts of the applied reference correspond to the claimed invention.

Claim 1 addresses a method for communicating using free space optical beam lines. A conduit encloses the free space beam lines and the hub. Each of the beam lines is transmitted through an assigned volume within the conduit. At least one of the beam lines is received at the hub while permitting at least another of the beam lines to pass through the hub on its way to another destination within the conduit beyond the hub.

The Willebrand reference does not teach the use of a conduit to enclose the free space beam lines. Further, this reference does not teach the use of a hub disposed within a conduit to receive

some of the beam lines while permitting other of the beam lines to pass through the hub without being processed by the hub on their way to a further destination. Willebrand discloses a hub in figure 6 in which each of the beam lines 24 terminate in a point-to-point link. For these differences as well as others, Willebrand does not anticipate the method according to claim 1.

Independent apparatus claim 8 describes an apparatus for facilitating communications using a free space optical beam line. It includes a conduit that encloses the beam lines and a hub. For reasons discussed above with regard to claim 1, Willebrand does not anticipate the elements as required accordance with claim 8.

The claims which depend on claims 1 and 8 provide further limitations providing patentable significance when considered as a whole in conjunction with the parent claims.

Method claim 6 has been rewritten in independent form. It was rejected under 35 U.S.C. 102 based on Willebrand. This rejection is respectfully traversed. The transmit and receive probes are arranged on a movable probe ring. The probe ring is rotated within a plane substantially perpendicular to the beam line and to the center line of the conduit in order to achieve alignment of the probes with the beam lines directed to the transmitting and receiving probes.

Referring to figure 2 of Willebrand, an adjustment mechanism 56 is shown for making certain adjustments with regard to the corresponding optical transceiver elements. As described in the text of Willebrand, adjustments are made in an X and Y plane to account for slight movements of one transceiver such as caused by the sway of a high-rise building. It is clear that the adjustments contemplated in Willebrand are merely to compensate for minor beam changes due to environmental conditions. Willebrand provides no suggestion nor a motivation for rotating its transceiver about its axis since this would not provide the compensation for a change of beam direction contemplated by Willebrand. Further, Willebrand does not teach the use of a conduit to enclose the beams. Therefore, claim 6 is not anticipated by Willebrand and the withdrawal of the rejection of this claim is sought.

Claim Rejections - 35 U.S.C. §103

MPEP §706.02(j) states: "To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)."

MPEP §2143.01 states: "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved, as a whole would have suggested to those of ordinary skill in the art. In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992)."

The Examiner rejected claims 2, 9, 14 and 16-18 under 35 U.S.C. 103 as being obvious based on Willebrand. Applicants respectfully submit that the applied reference does not teach or suggest, and hence does not render obvious, one or more elements of the claimed invention, as further discussed below. Applicant respectfully traverses the rejections and seeks withdrawal of the rejections resulting in allowance of the application.

Method claim 2 has been rewritten in independent format. The beam is transmitted through a volume that is contained within a conduit. Further, the conduit contains a hub. The volumes are arranged in a helix around the circumference of the beam line and around the centerline within the conduit. Willebrand does not teach such an arrangement, as acknowledged in the Office

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Action. As shown in figure 12 of Willebrand, beams (volumes) are arranged around the circumference in a common circular pattern.

It was stated in the Office Action that:

"One skilled in the art would have clearly have recognized that it would have been possible to place the volumes of Willebrand in any manner including helically around the circumference of the beam line. One skilled in the art would have been motivated to do so in order to improve reception quality or to produce delays between receive signals. Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to arrange the volumes of Willebrand in a helix around the circumference of the beam line."

Applicant respectfully traverses this conclusion and submits that a prima facie ground for rejection has not been met. It is a fact that Willebrand simply does not suggest helical orientation. The case law is clear that the appropriate test under 35 U.S.C. 103 is not "an obvious to try" standard. Stating that it would have been possible to rearrange the volumes as described in Willebrand is effectively an obvious to try approach. This is simply not permitted since it basically relies on a hindsight approach based on the teachings of applicant's own invention.

Further, the stated motivation for attempting to try such a helical arrangement is lacking. There appears to be no evidence in the current proceedings that would suggest that the use of a helical orientation would "improve reception quality". Since there is no suggestion of such an improvement, one of ordinary skill the art would not have been motivated to consider helical orientations for that reason. It was further suggested that motivation would have been provided in order "to produce delays between receive signals". First, the use of a helical orientation does not necessarily result in delays between receive signals since the distance between the transmitting element and receiving element may be the same for different beams and hence there would be no time differences. Also, it is not understood why obtaining delays between received signals would be an advantage. Assuming that each processing unit associated with a receiving probe would be capable processing the throughput of information contained on the received beam, delays between receiving a first and second beam by different probes does not necessarily

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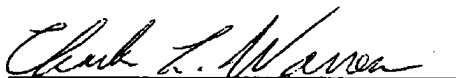
offer any advantage. Thus, the suggested motivations would not have been recognized by one of ordinary skill in the art to be a reason to consider helical orientations. Therefore, the basis for the rejection under 35 U.S.C. 103 is not sustained.

Should the Examiner elect to maintain a rejection of claim 2 under 35 U.S.C. 103, applicant respectfully requests the citation of appropriate prior art suggesting a helical orientation of optical transceivers.

Independent apparatus claim 9 describes an apparatus for facilitating communications using a free space optical beam line. It includes a conduit that encloses the beam lines and a hub. For reasons discussed above with regard to claim 2, especially as to the helical arrangement, Willebrand does not anticipate the elements as required accordance with claim 9.

In view of the above amendments and remarks, allowance of all claims pending is respectfully requested. If a telephone conference would be of assistance in advancing the prosecution of this application, the Examiner is invited to call applicants' attorney.

Respectfully submitted,



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